

Amendments to the Claims: This listing of claims will replace all prior versions, and listings, of claims in the application

Listing of Claims:

1 - 19 (Canceled)

20. (New) A surface acoustic wave filter comprising:

a piezoelectric substrate;

at least an input IDT electrode arranged on said piezoelectric substrate; and

at least an output IDT electrode arranged on said piezoelectric substrate,

wherein said surface acoustic wave filter is a longitudinally coupled mode surface acoustic filter and includes said input IDT electrode and said output IDT electrode disposed within a single propagation path in which a surface acoustic wave propagates,

said input IDT electrode has a plurality of electrode fingers pitches;

of the electrode fingers pitches of said input IDT electrode, an electrode fingers pitch having the most pairs of electrode fingers is defined as a main input pitch,

said output IDT electrode has a plurality of electrode fingers pitches,

of the electrode fingers pitches of said output IDT electrode, an electrode fingers pitch having the most pairs of electrode fingers is defined as a main output pitch,

the main input pitch of electrode fingers of said input IDT electrode and the main output pitch of electrode fingers of said output IDT electrode are different from each other,

the main pitch of electrode fingers of the IDT electrode larger in number of electrode fingers in said input and output IDT electrode is larger than the main pitch of electrode fingers smaller in number of electrode fingers, and

one of said input IDT electrode and said output IDT electrode comprises first IDT electrode each including a pair of electrode fingers opposed to each other;

the other of said input IDT electrode and said output IDT electrode comprises second and third IDT electrodes each including a pair of electrode fingers opposed to each other;

said second IDT electrode is placed on one side of said first IDT electrode;

said third IDT electrode is placed on the other side of said first IDT electrode;

said first, second, and third IDT electrodes are arranged along a direction in which a surface acoustic wave propagates; and

the peak frequency of the radiation characteristic of said first IDT electrode and at least one of said second and third IDT electrode are substantially equal to each other.

21. (New) The surface acoustic wave filter according to claim 20, wherein said fourth IDT electrode is placed on the side of said second IDT electrode opposite from the side on which said first IDT electrode is placed; and

said fifth IDT electrode is placed on the side of said third IDT electrode opposite from the side on which said first IDT electrode is placed.

22. (New) A surface acoustic wave filter comprising:

a piezoelectric substrate;

at least an input IDT electrode arranged on said piezoelectric substrate; and

at least an output IDT electrode arranged on said piezoelectric substrate,

wherein said surface acoustic wave filter is a longitudinally coupled mode surface acoustic filter and includes said input IDT electrode and said output IDT electrode disposed within a single propagation path in which a surface acoustic wave propagates,

said input IDT electrode has a plurality of electrode fingers pitches;

of the electrode fingers pitches of said input IDT electrode, an electrode fingers pitch having the most pairs of electrode fingers is defined as a main input pitch,

said output IDT electrode has a plurality of electrode fingers pitches,

of the electrode fingers pitches of said output IDT electrode, an electrode fingers pitch having the most pairs of electrode fingers is defined as a main output pitch,

the main input pitch of electrode fingers of said input IDT electrode and the main output pitch of electrode fingers of said output IDT electrode are different from each other,

the main pitch of electrode fingers of the IDT electrode larger in number of electrode fingers in said input and output IDT electrode is larger than the main pitch of electrode fingers smaller in number of electrode fingers, and

one of said input IDT electrode and said output IDT electrode comprises first, fourth, and fifth IDT electrodes each including a pair of electrode fingers opposed to each other;

the other of said input IDT electrode and said output IDT electrode comprises second and third IDT electrodes each including a pair of electrode fingers opposed to each other;

said second and third IDT electrodes are placed on opposite sides of said first IDT electrode;

said fourth IDT electrode is placed on the side of said second IDT electrode opposite from the side on which said first IDT electrode is placed;

said fifth IDT electrode is placed on the side of said third IDT electrode opposite from the side on which said first IDT electrode is placed;

said first, second, third, fourth, and fifth IDT electrodes are arranged along a direction in which a surface acoustic wave propagates; and

the peak frequencies of the radiation characteristics of at least one of said fourth and fifth IDT electrodes, and at least one of said second and third IDT electrodes are substantially equal to each other.

23. (New) A surface acoustic wave filter comprising:

a piezoelectric substrate;

at least an input IDT electrode arranged on said piezoelectric substrate; and

at least an output IDT electrode arranged on said piezoelectric substrate,

wherein said surface acoustic wave filter is a longitudinally coupled mode surface acoustic filter and includes said input IDT electrode and said output IDT electrode disposed within a single propagation path in which a surface acoustic wave propagates,

said input IDT electrode has a plurality of electrode fingers pitches;

of the electrode fingers pitches of said input IDT electrode, an electrode fingers pitch having the most pairs of electrode fingers is defined as a main input pitch,

said output IDT electrode has a plurality of electrode fingers pitches,

of the electrode fingers pitches of said output IDT electrode, an electrode fingers pitch having the most pairs of electrode fingers is defined as a main output pitch,

the main input pitch of electrode fingers of said input IDT electrode and the main output pitch of electrode fingers of said output IDT electrode are different from each other,

the main pitch of electrode fingers of the IDT electrode larger in number of electrode fingers in said input and output IDT electrode is larger than the main pitch of electrode fingers smaller in number of electrode fingers,

wherein said input IDT electrode has electrode fingers spaced to define first and second electrode fingers pitches;

the first electrode fingers pitch is the main input pitch of said input IDT electrode,

said output IDT electrode has electrode fingers spaced to define third and fourth pitches,

the third electrode fingers pitch is the main output pitch of said output IDT electrode,

a peak frequency of a radiation characteristic of said input IDT electrode is substantially equal to a peak frequency of a radiation characteristic of said output IDT electrode,

one of said input IDT electrode and said output IDT electrode comprises first, fourth, and fifth IDT electrodes each including a pair of electrode fingers opposed to each other;

the other of said input IDT electrode and said output IDT electrode comprises second and third IDT electrodes each including a pair of electrode fingers opposed to each other;

said second and third IDT electrodes are placed on opposite sides of said first IDT electrode;

said fourth IDT electrode is placed on the side of said second IDT electrode opposite from the side on which said first IDT electrode is placed;

said fifth IDT electrode is placed on the side of said third IDT electrode opposite from the side on which said first IDT electrode is placed;

said first, second, third, forth and fifth IDT electrodes are arranged along a direction in which a surface acoustic wave propagates; and

the peak frequencies of the radiation characteristics of the group of said first IDT electrode, and the group of said second and third IDT electrodes are substantially equal to each other.

24. (New) A surface acoustic wave filter comprising:

a piezoelectric substrate;

at least an input IDT electrode arranged on said piezoelectric substrate; and

at least an output IDT electrode arranged on said piezoelectric substrate,

wherein said surface acoustic wave filter is a longitudinally coupled mode surface acoustic filter and includes said input IDT electrode and said output IDT electrode disposed within a single propagation path in which a surface acoustic wave propagates,

said input IDT electrode has a plurality of electrode fingers pitches;

of the electrode fingers pitches of said input IDT electrode, an electrode fingers pitch having the most pairs of electrode fingers is defined as a main input pitch,

said output IDT electrode has a plurality of electrode fingers pitches,

of the electrode fingers pitches of said output IDT electrode, an electrode fingers pitch having the most pairs of electrode fingers is defined as a main output pitch,

the main input pitch of electrode fingers of said input IDT electrode and the main output pitch of electrode fingers of said output IDT electrode are different from each other,

the main pitch of electrode fingers of the IDT electrode larger in number of electrode fingers in said input and output IDT electrode is larger than the main pitch of electrode fingers smaller in number of electrode fingers,

wherein said input IDT electrode has electrode fingers spaced to define first and second electrode fingers pitches;

the first electrode fingers pitch is the main input pitch of said input IDT electrode,

said output IDT electrode has electrode fingers spaced to define third and fourth pitches,

the third electrode fingers pitch is the main output pitch of said output IDT electrode,

a peak frequency of a radiation characteristic of said input IDT electrode is substantially equal to a peak frequency of a radiation characteristic of said output IDT electrode,

one of said input IDT electrode and said output IDT electrode comprises first, fourth, and fifth IDT electrodes each including a pair of electrode fingers opposed to each other;

the other of said input IDT electrode and said output IDT electrode comprises second and third IDT electrodes each including a pair of electrode fingers opposed to each other;

said second and third IDT electrodes are placed on opposite sides of said first IDT electrode;

said fourth IDT electrode is placed on the side of said second IDT electrode opposite from the side on which said first IDT electrode is placed;

said fifth IDT electrode is placed on the side of said third IDT electrode opposite from the side on which said first IDT electrode is placed;

said first, second, third, forth and fifth IDT electrodes are arranged along a direction in which a surface acoustic wave propagates; and

the peak frequencies of the radiation characteristics of the group of said fourth and fifth IDT electrodes, and the group of said second and third IDT electrodes are substantially equal to each other.